Amendments to the Claims

1. (Currently amended) An inter-chip communication system for the communication of a plurality of N-bit signal groups between a first logic device and a second logic device that are coupled together through an M-bit wide conductive element, wherein N>M, comprising:

transmission logic in the first logic device for transmitting, M bits at a time across the M-bit wide conductive element, any N-bit signal group that changed in value ~~M bits at a time across the M-bit conducting element~~, the transmission logic comprising:

an event detector for each N-bit signal group for detecting a change in value in its associated N-bit signal group and providing an even indication identifying that its N-bit signal group changed in value; and

a packet scheduler for each N-bit signal group for receiving the event indication from the event detector associated with its N-bit group and dividing the N-bit signal group into M-bit data groups; and

reception logic in the second logic device for receiving the N-bit signal group,

wherein the packet scheduler is capable of receiving, holding, and passing a token.

2-5. (Canceled).

6. (Currently amended) The inter-chip communication system of claim [4]1, wherein the transmission logic further comprises:

scan-out logic for selecting the M-bit data groups for transmission across the M-bit wide conductive element.

7. (Canceled).

8. (Currently amended) The inter-chip communication system of claim 1, wherein each N-bit signal group is associated with an identifying header, the reception logic further comprising:

header decode unit for receiving the M-bit data groups and determining to which N-bit signal group these M-bit data groups belong.

9. (Canceled).

10. (Currently amended) The inter-chip communication system of claim ~~5~~1, wherein the packet scheduler transmits its M-bit data groups when it holds a token.

11. (Currently amended) The inter-chip communication system of Claim 10, wherein the packet scheduler holds a token[.] when it receives the token and an even indication.

12. (Currently amended) The inter-chip communication system of claim 10, wherein the packet scheduler passes a token[.] when it receives the token and no even indication has been received.

13. (Currently amended) A data transmission communication system for the transmission of a plurality of N-bit signal groups from a first logic device to a second logic device that are coupled together through an M-bit wide conductive element, comprising:

an event detector network for detecting a change in value among the N-bit signal groups and providing an event indication identifying the particular signal group that changed in value; and

a scheduler for selecting the N-bit signal group that changed in value and scheduling its transmission, the scheduler including a plurality of packet schedulers each associated with its own N-bit signal group, the plurality of packet schedulers deciding among themselves which N-bit signal group to transmit, each

packet scheduler either passing or holding a token depending on whether or not it receives an event indication.

14. (Original) The data transmission communication system of claim 13, wherein N>M the scheduler divides the N-bit signal group into a plurality of M-bit groups.

15. (Original) The data transmission communication system of claim 13, wherein the event detector network includes a plurality of event detectors and each event detector is associated with its own N-bit signal group.

16. (Original) The data transmission communication system of claim 15, wherein the event detector for each N-bit signal group detects a change in value in its associated N-bit signal group and provides an event indication identifying that its N-bit signal group changed in value.

17. (Original) The data transmission communication system of claim 15, wherein the scheduler includes a plurality of packet schedulers and each packet scheduler is associated with its own N-bit signal group.

18.–19. (Canceled)

20. (Original) The data transmission communication system of claim 19, wherein N>M and each packet scheduler receives the event indication and divides the N-bit signal group associated with the event indication into M-bit data groups.

21. (Canceled)

22. (Currently amended) The data transmission communication system of Claim ~~19~~ 13, wherein the packet scheduler transmits its M-bit data groups when it holds a token.

23. (Original) The data transmission communication system of claim 20, wherein the packet scheduler transmits its M-bit data groups when it holds a token.

24. (Currently amended) The data transmission communication system of Claim ~~19~~ 13, wherein the packet scheduler holds a token when it receives the token and an event indication.

25. (Currently amended) The data transmission communication system of Claim ~~19~~ 13, wherein the packet scheduler passes a token [.] when it receives the token and no event indication has been received.

26. (Currently amended) A method of scheduling the transmission of a packet from a first logic device to a second logic device across an M-bit wide connection, the packet selected from a plurality of N-bit signal groups, comprising:

detecting a change in value among the N-bit signal groups;

selecting the changed N-bit signal group for transmission by identifying the N-bit signal group that experienced the change in value and determining when the N-bit signal group should be transmitted, said determining including determining whether the identified N-bit signal group currently has a token and scheduling the transmission of the identified N-bit signal group if it has a token;

processing the N-bit signal group into a transmission data group; and

transmitting the transmission data group across the M-bit wide connection.

27. (Original) The method of claim 26, wherein N>M and the step of processing further comprises:

dividing the N-bit signal groups into M-bit data groups, wherein the transmission data group comprises the M-bit data groups.

28. (Canceled)

29. (Original) The method of claim 27, wherein the step of transmitting includes:

transmitting the transmission data group by transmitting, M bits at a time, each M-bit data group.

30. (Canceled)